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HUNGER THE PRIMITIVE DESIRE.

BY S. V. CLEVENGER, M. D.

A paper on Researches into the Life History of the Monads by W. H. Dallinger, F. R. M. S., and J. Drysdale, M. D., was read before the Royal Microscopical Society, Dec. 3d, 1873, wherein fission of the Monad was described as being preceded by the absorption of one form by another. One Monad would fix on the sarcode of another and the substance of the lesser or under one would pass into the upper one. In about two hours the merest trace of the lower one was left and in four hours fission and multiplication of the larger monad began. A full description of this interesting phenomenon may be found in the *Monthly Microscopical Journal* (London), for October, 1877.

Professor Leidy has asserted that the Amœba is a cannibal, whereupon Mr. J. Michels in the *American Journal of Microscopy*, July, 1877, calls attention to Dallinger and Drysdale's contribution and draws therefrom the inference that each cannibalistic act of the Amœba is a reproductive one, or copulative, if the term is admissible. The editor (Dr. Henry Lawson), of the English journal, Oct., 1877, agrees with Michels.

Among the numerous speculations upon the origin of the sexual appetite, such as Maudsley's altruistic conclusion, which always seemed to me to be far-fetched, I have encountered none that referred its derivation to *hunger*. At first glance such a suggestion seems ludicrous enough, but a little consideration will show that in thus fusing two desires we have still to get at the meaning and derivation of the primary one—desire for food.

The cannibalistic Amœba may, as Dallinger's Monad certainly does, impregnate itself by eating its own kind, and we have innumerable instances among Algæ and Protozoa of this sexual fusion appearing very much like ingestion. Crabs have been seen to confuse the two desires by actually eating portions of each other while copulating, and in a recent number of the *Scientific American*, a Texan details the *Mantis religiosa* female eating off the head of the male Mantis during conjugation. Some of the female Arachnidæ find it necessary to finish the marital repast by devouring the male, who tries to scamper away from his fate. The bitings and even the embrace of the higher animals appears to have reference to this derivation. It is a physiological fact that association often transfers an instinct in an apparently outrageous manner. With quadrupeds it is undoubtedly olfaction that is most closely related to sexual desire and its reflexes, but not so in man. Ferrier diligently searches the region of the temporal lobe near its connection with the olfactory nerve for the seat of sexuality, but with the diminished importance of the smelling sense in man the faculty of sight has grown to vicaritate olfaction; certainly the "lust of the eyes" is greater than that of other special sense organs among Bimana.

In all animal life multiplication proceeds from growth, and until a certain stage of growth, puberty, is reached, reproduction does not occur. The complementary nature of growth and reproduction is observable in the large size attained by some animals after castration. Could we stop the division of an Amœba a comparable increase in size would be effected. The grotesqueness of these views is due to their novelty, not to their being unjustifiable.

While it would thus seem apparent that a primeval origin for both ingestive and sexual desire existed, and that each is a true hunger, the one being repressible and in higher animal life being subjected to more control than the other, the question then presents itself: What is hunger? It requires but little reflection to convince one of its potency in determining the destinies of nations and individuals, and what a stimulus it is in animated creation. It seems likely that it has its origin in the atomic

affinities of inanimate nature, a view monistic enough to please Haeckel and Tyndall.

NOTES ON THE ANATOMY OF THE ENCEPHALON, NOTABLY OF THE GREAT GANGLIA.

BY EDWARD C. SPITZKA, M. D.

The anatomy of no portion of the brain is so obscure and so imperfectly known as that of the so-called Thalamus opticus. One of the first requisites to a comprehension of its relations is the establishment of a proper nomenclature, and the point to start from is the very name under which the great ganglionic mass is known. Since it is not exclusively or even in the main connected with the optic tracts in any animal or man, and, indeed, is in the lower sauropsidæ and amphibians not connected with them at all, the affix *opticus* should be dropped, and the first word involving that very uncompromising conception of an elevation at the ventricular floor may be retained: *Thalamus*.

The current conception that the Thalamus is an elevation at the floor of the *lateral* ventricle is incorrect. One of our leading comparative anatomists will shortly review this question, and it will therefore be but necessary for me to refer to the matter.

In the cat's brain it can be clearly seen, that (aside from membranous separations) the great mass of the Thalamus is excluded from the cavity of the lateral ventricle by the fusion of the lateral edge of the fornix with the corpus striatum, or rather with the ependyma of that ganglion. Consequently, the two thalami are included in the third ventricle, which cavity on cross section resembles an upright T, whose vertical branch descends between the thalami, as a deep ditch, the *vulva cerebri* of the old anatomists.¹

Luys, who was unfortunately wedded to certain physiological prejudices as to the function of the thalamic centres, restricted the term *Thalamus* to the most external mass. Meynert called all the centres in the aggregate by that term as a collective designation. He excluded, however, that gray mass which lines the sides of the vertical slit of the third ventricle.

Now, the third ventricle, as shown by Hadlich and Wilder, extends over the entire thalami; it would be, therefore, incorrect to limit the designation "central tubular gray of the third ventricle" to that portion only which lines the vertical slit. Either this latter designation should be extended to the entire thalamic masses or the term thalamus should be extended to the so-called central tubular gray.

Thus interpreted there would be, strictly speaking, but a single thalamus, consisting of two main masses, and a commissural part. The commissure is double. The thalami are primitively united by the lower of these commissures, which I propose to term "basilar commissure."² Secondly, and only in animals above marsupials (as far as I am aware), do we find another commissure produced at an advanced period of embryonic development by apposition of the main masses. This is the so-called middle commissure of the brain, the *commissura grisea, c. mollis*. I should consider the least ambiguous designation, "the *thalamic fusion*."

In a manner similar to that which separates the caudate and lenticular nuclei from each other, and which divides the latter into subsidiary "artificuli," the chief mass of each thalamus is separated into an inner and outer zone. The zones are separated from each other by

¹The corresponding *penis cerebri* of the same anatomists has, by more fastidious colleagues, been rebaptized *pinus cerebri* and later *pineal gland*, now known as the *epiphysis cerebri*.

²Continuous in front with the *loci perforati antici*, behind with the *infundibulum*. Atrophic over the chiasm, it exhibits a set of transverse fibres and gray substance elsewhere.